

Amendments to the Claim:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (withdrawn). Species specific method for identifying infection of a mammal with Chlamydia pneumoniae, said method comprising detecting in a patient or in a patient sample the presence of antibodies against (i) one or more proteins from the outer membrane of Chlamydia pneumoniae, said proteins being outer membrane proteins selected from proteins having the sequence as shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or in SEQ ID NO:24, or (ii) a subsequence of at least 6 consecutive amino acids of any of said proteins.

2 (withdrawn). Method according to claim 1 wherein detection of nucleic acid fragments is obtained by using nucleic acid amplification.

3 (withdrawn). Method according to claim 2, wherein detection of nucleic acid fragments is obtained by using polymerase chain reaction.

4 (withdrawn). A nucleic acid fragment derived from Chlamydia pneumoniae comprising the nucleotide sequence SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, or SEQ ID NO:23, or a subsequence of said nucleotide sequence.

5 (currently amended). ~~An A non-naturally occurring or~~ isolated protein or peptide which is (i) an isolated protein derived from Chlamydia pneumoniae having the amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, and SEQ ID NO:24, said protein being free of any other chlamydial

protein, or (ii) an isolated ~~or non-naturally occurring~~ peptide or protein which consists of an amino acid sequence which is a subsequence, at least 6 amino acids in length, of at least one of said isolated proteins of (i) above, said subsequence comprising at least one T cell epitope of at least one of said isolated proteins of (i) above.

6 (withdrawn). Polyclonal monospecific antibody against the protein with the sequence shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24.

7 (previously presented). A diagnostic kit for the diagnosis of infection of a mammal with Chlamydia pneumoniae, said kit comprising a peptide or protein of claim 5.

8 (withdrawn). A diagnostic kit for the diagnosis of infection of a mammal with Chlamydia pneumoniae, said kit comprising an antibody against (i) a protein with the amino acid sequence SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24 or (ii) a subsequence of at least 6 consecutive amino acids of any of said proteins.

9 (withdrawn). A diagnostic kit for the diagnosis of infection of a mammal with Chlamydia pneumoniae, said kit comprising a nucleic acid fragment with the sequences SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, or SEQ ID NO:23, or a subsequence thereof.

10 (previously presented). A composition for immunising a mammal against Chlamydia pneumoniae, said composition comprising a peptide or protein of claim 5.

11 (withdrawn). Method of claim 1, comprising use of a protein with the sequence shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24, or a subsequence thereof in diagnosis of infection of

a mammal with *Chlamydia pneumoniae*.

12 (cancelled).

13 (withdrawn). A method of immunizing a mammal against *Chlamydia pneumoniae* which comprises use of an immunologically effective amount of a protein with the sequence shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24, or a subsequence thereof, for immunising a mammal against *Chlamydia pneumoniae*.

14 (cancelled).

15 (withdrawn). A method of immunizing a mammal against *Chlamydia pneumoniae* which comprises use of an immunologically effective amount of a nucleic acid fragment with the nucleotide sequence shown in SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, or SEQ ID NO:23, or a subsequence of said nucleotide sequence to immunize a mammal, by administering said nucleic acid fragment under conditions conducive to expression of said protein and subsequent immunization of said mammal by said protein.

16 (withdrawn). The method of claim 13 wherein the protein is in undenatured form.

17 (withdrawn). The method of claim 1 in which the subsequence (ii) comprises at least 100 consecutive amino acids of sequence of (i).

18 (withdrawn). Species specific method for identifying infection of a mammal with *Chlamydia pneumoniae*, said method comprising

(a) obtaining a sample of a biological fluid or tissue from a mammal suspected of being infected with *Chlamydia pneumoniae*,

(b) contacting said sample with a diagnostic reagent, said reagent comprising an isolated protein according to claim 1 in labeled or immobilized form, and

(c) correlating the binding of said protein with a

component of said sample to the presence or absence of an infection.

19-21 (cancelled).

22 (previously presented). The protein or peptide of claim 5 where said subsequence is at least 10 amino acids in length.

23 (previously presented). The protein or peptide of claim 5 where said subsequence is at least 15 amino acids in length.

24 (previously presented). The protein or peptide of claim 5 where said subsequence is at least 20 amino acids in length.

25 (previously presented). The protein or peptide of claim 5 where said subsequence is at least 30 amino acids in length.

26 (cancelled).

27 (previously presented). The protein or peptide of claim 5 which comprises at least two Gly-Gly-Ala-Ile (amino acids 164-167 of SEQ ID NO:2) motifs.

28 (previously presented). The protein or peptide of claim 5 which comprises at least three Gly-Gly-Ala-Ile (amino acids 164-167 of SEQ ID NO:2) motifs.

29 (previously presented). The protein or peptide of claim 5 which comprises at least four Gly-Gly-Ala-Ile (amino acids 164-167 of SEQ ID NO:2) motifs.

30 (previously presented). The protein or peptide of claim 5 which comprises a Phe-Tyr-Asp-Pro-Ile (amino acids 374-378 of SEQ ID NO:2) motif.

31 (currently amended). The protein or peptide of claim 5 whose amino acid sequence comprises at least two tryptophans which each correspond to a conserved tryptophan, ~~identified as conserved in Figs. 8A-8F~~ as set forth below:

in Omp4 (SEQ ID NO:2), positions 568, 572, 587, 608, 635, 767 and 875;

in Omp5 (SEQ ID NO:4), positions 574, 578, 595, 616, 643, 768, and 875;

in Omp6 (SEQ ID NO:6), positions 564, 668, 580, 601, 628, 761, and 869;

in Omp7 (SEQ ID NO:8), positions 482, 486, 497, 518, 545,

682 and 788;

in Omp8 (SEQ ID NO:10), positions 577, 582, 594, 615, 642,
768 and 875;

in Omp9 (SEQ ID NO:12), positions 575, 590, 611, 638, 759
and 865;

in Omp10 (SEQ ID NO:14), positions 576, 580, 595, 616, 643,
766 and 875;

in Omp11 (SEQ ID NO:16), positions 579, 583, 596, 617, 644,
769 and 877;

in Omp12 (SEQ ID NO:18), positions 119 and 226;

in Omp13 (SEQ ID NO:20), position 478;

and in Omp15 (SEQ ID NO:24), positions 614, 635, 662, 786
and 892.

32 (currently amended). The protein or peptide of claim 5 whose amino acid sequence comprises at least four tryptophans which each correspond to a conserved tryptophan as set forth below: identified as conserved in Figs. 8A-8J

in Omp4 (SEQ ID NO:2), positions 568, 572, 587, 608, 635,
767 and 875;

in Omp5 (SEQ ID NO:4), positions 574, 578, 595, 616, 643,
768, and 875;

in Omp6 (SEQ ID NO:6), positions 564, 668, 580, 601, 628,
761, and 869;

in Omp7 (SEQ ID NO:8), positions 482, 486, 497, 518, 545,
682 and 788;

in Omp8 (SEQ ID NO:10), positions 577, 582, 594, 615, 642,
768 and 875;

in Omp9 (SEQ ID NO:12), positions 575, 590, 611, 638, 759
and 865;

in Omp10 (SEQ ID NO:14), positions 576, 580, 595, 616, 643,
766 and 875;

in Omp11 (SEQ ID NO:16), positions 579, 583, 596, 617, 644,
769 and 877;

in Omp12 (SEQ ID NO:18), positions 119 and 226;

in Omp13 (SEQ ID NO:20), position 478;

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and in Omp15 (SEQ ID NO:24), positions 614, 635, 662, 786 and 892.

33 (previously presented). The protein or peptide of claim 5 comprises an amino acid sequence identical to the region from amino acid 400 to 490 of at least one of said isolated proteins.

34-44 (cancelled).